

Please Enter
5/4/04
pt

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Youfan Gu	Examiner: Hassanzadeh, Parviz
Serial No.: 09/847,674	Group Art Unit: 5385
Filed: 05/02/2001	
For: Method For Removing Condensable Aluminum Chloride Vapor From Aluminum Etch Effluent	Docket No. 16458-056

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

I CERTIFY THAT, ON MAY 4, 2004, THIS PAPER IS BEING FACSIMILE
TRANSMITTED TO THE USPTO OR DEPOSITED WITH THE UNITED
STATES POSTAL SERVICE WITH SUFFICIENT POSTAGE AS FIRST CLASS
MAIL IN AN ENVELOPE ADDRESSED TO THE COMMISSIONER FOR
PATENTS, P.O. Box 1450, ALEXANDRIA, VA 22313-1450.


[Stefan Bump]

SUPPLEMENTAL AMENDMENT

Sir:

In further response to the several telephone conferences with Examiner Parviz Hassanzadeh over the past several days, please consider further amendments to the above-referenced patent application over the applicant's last amendment, dated March 8, 2004:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 4 of this paper.

Remarks/Arguments begin on page 11 of this paper.

- [0044] As shown in Figures 2 and 6, the housing 60 and end walls 94, 108 of trap 10 enclose an interior chamber 90, and a removable, disposable trap element 42 is positioned in the chamber 90 for condensing and trapping the aluminum chloride in the effluent from the reaction chamber 14 of Figure 1. The trap element 42 comprises a cylindrical outer trapping medium 48 surrounded by a solid, cylindrical shield 53, a smaller diameter cylindrical screen column 52 inside the outer trap medium 48, a core trapping medium 44 disposed in the cylindrical screen column 52, and an annular intermediate trapping medium 46 disposed in the annular space 54 between the screen column 52 and the outer medium 48. The trapping media 44, 46, 48 comprise mesh material, preferably metal mesh, that allows flow of gases therethrough, but that also provides many surfaces that facilitate condensation and deposition of aluminum chloride 40, 41 in Figure 6. A primary or first trapping stage 200 comprises a first trapping medium positioned closer to the inlet opening 35 for initially more condensation and build-up 40 and a second trapping medium positioned farther from the inlet opening 35 for initially less condensation and build-up 41 than the build-up 40, but gradually increasing condensation and solid build-up 41 of AlCl_3 as heat transfer between AlCl_3 in the gas flow and the solid AlCl_3 build-up 40 becomes less efficient, as described in more detail below. In the preferred embodiment of the trap 10, an outer cylindrical medium 48 and the cylindrical screen column 52, especially those portions of outer medium 48 and screen column 52 that are upstream of core medium 44 and annular medium 46, comprise the first trapping medium and second trapping medium, respectively, of the primary or first trapping stage 200 of the removable, disposable trapping element 42. The core medium 44 and annular medium 46, along with the lower portions of the outer cylindrical medium 48 and

cylindrical screen column 52, comprise a secondary or second trapping stage 205 of the disposable trapping element 42.